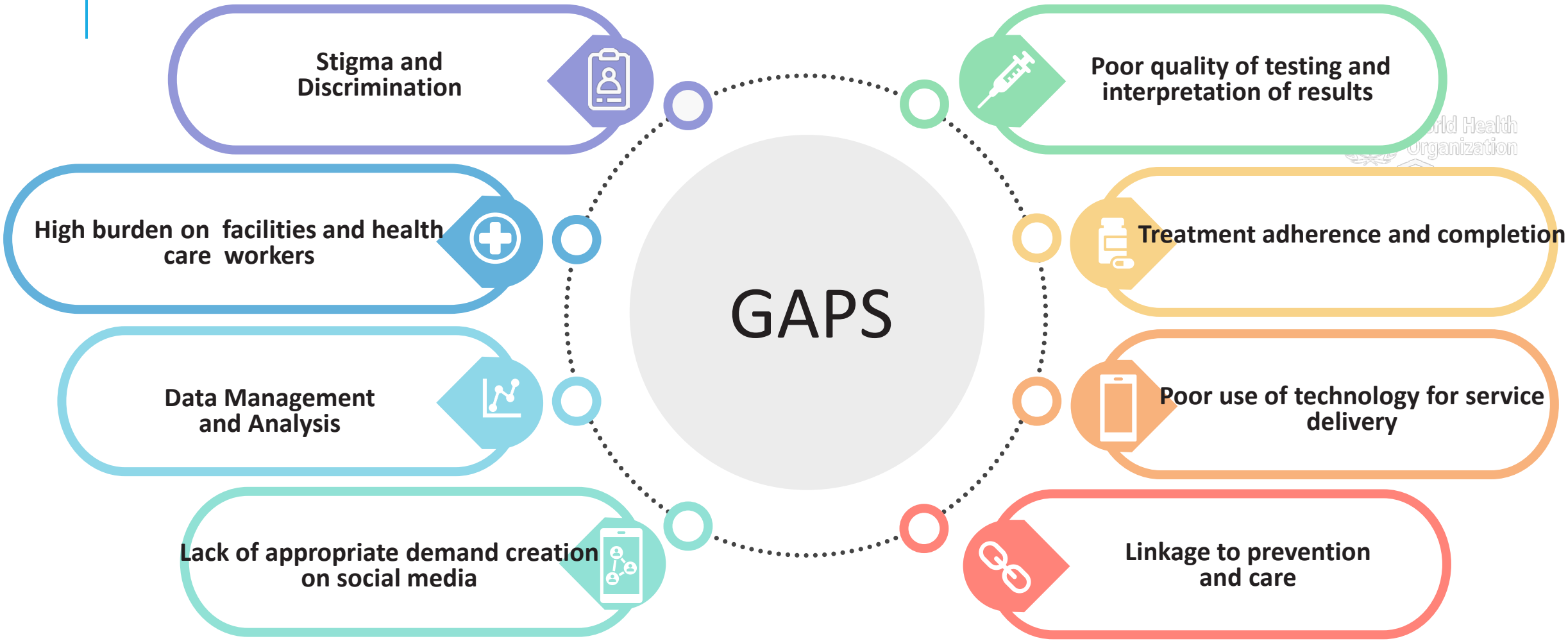
THE USE OF AI FOR HIV, HEPATITIS AND STI PROGRAMMES

Purvi Shah
WHO, Global HIV, Hepatitis and STI programmes, Geneva
UNAIDS, Regional Support team – Asia Pacific, Bangkok

PMAC 2025
1 February 2025

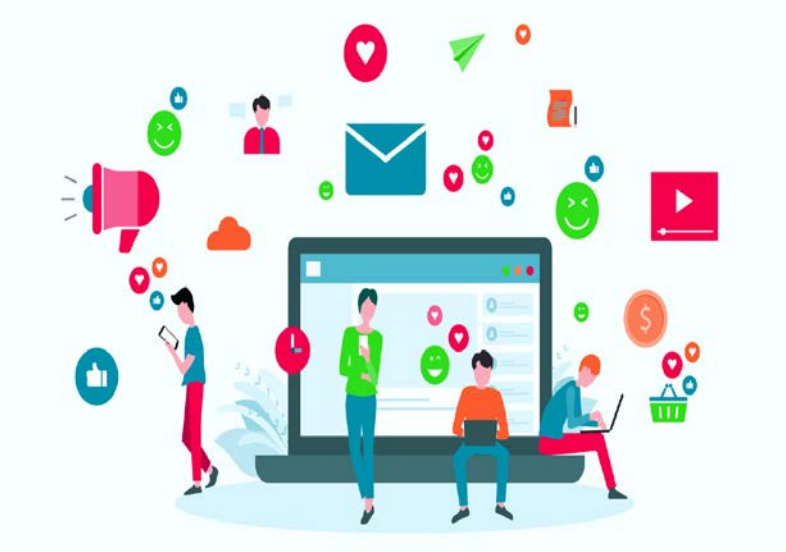
UNAIDS World Health Organization

GAPS IN HIV, HEPATITIS AND STI PROGRAMMES



UNAIDS World Health Organization

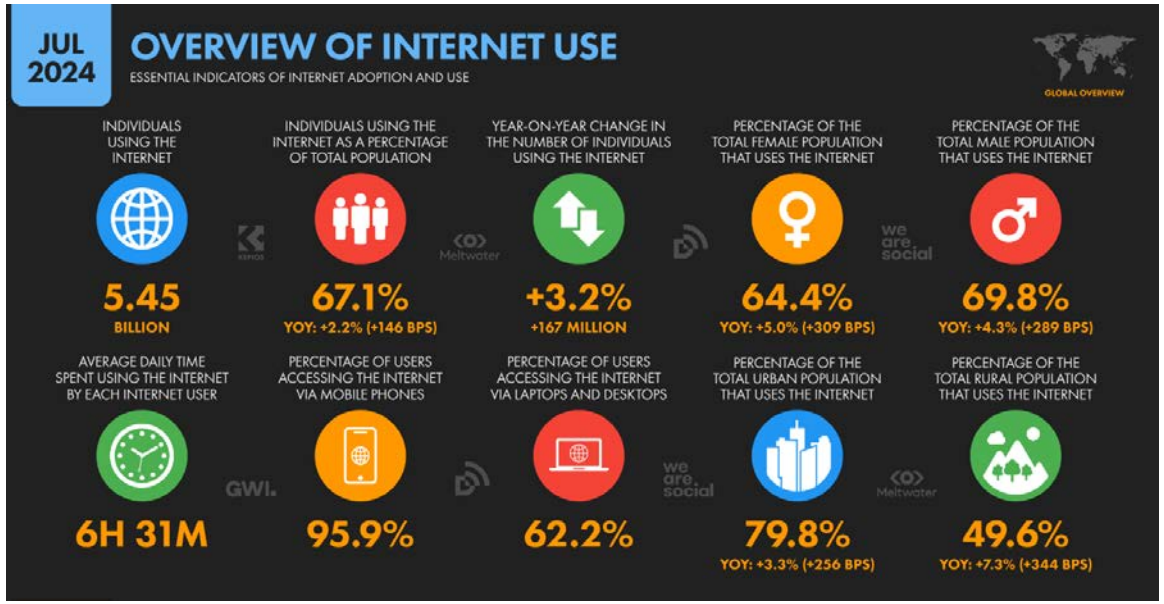
WHAT ARE VIRTUAL INTERVENTIONS

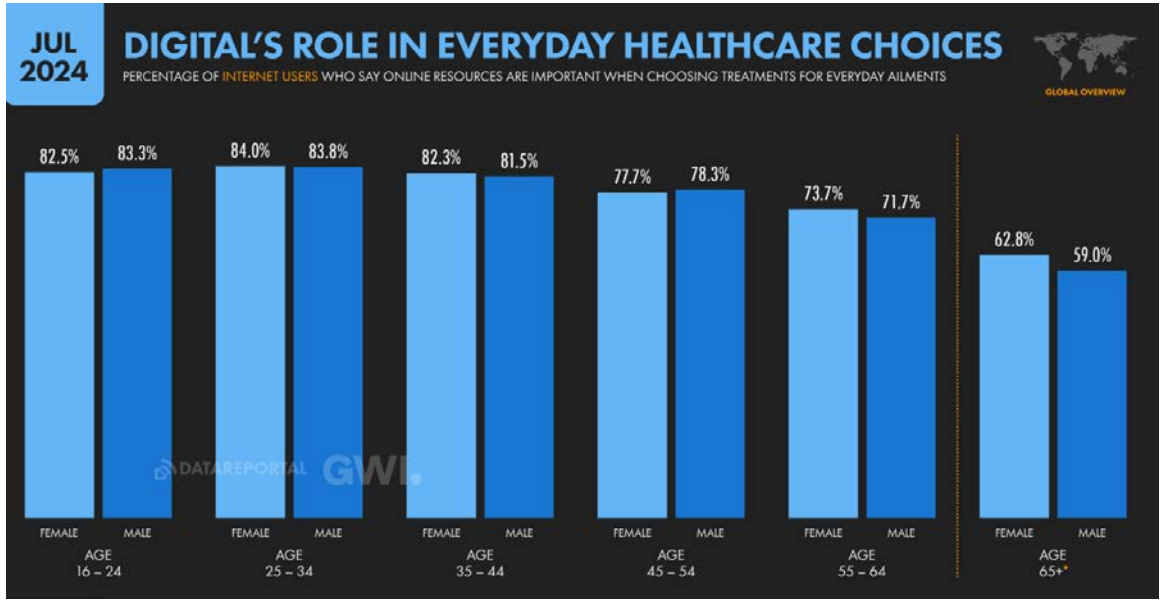


- Interventions that use any of the strategies or approaches virtually without coming face to face with the client is called virtual interventions.
- This can be internet or feature phone based - awareness, social media posts, demand creation or mailing a HIV self test kit
- With the experience of COVID -19, globally HIV programs moved virtual
- Virtual interventions help programs to continue providing services to the populations without coming to the facility.

WHY SHOULD WE GO VIRTUAL?

- **5.45 billion internet users** (67% of total population)
- Avg **83% of youth** rely on the internet for healthcare options
- **6.5 hours on internet**
- Reach broader audience
- Targeted reach
- **Offers choices**
- Improves efficiency
- Saves cost
- Less time consuming

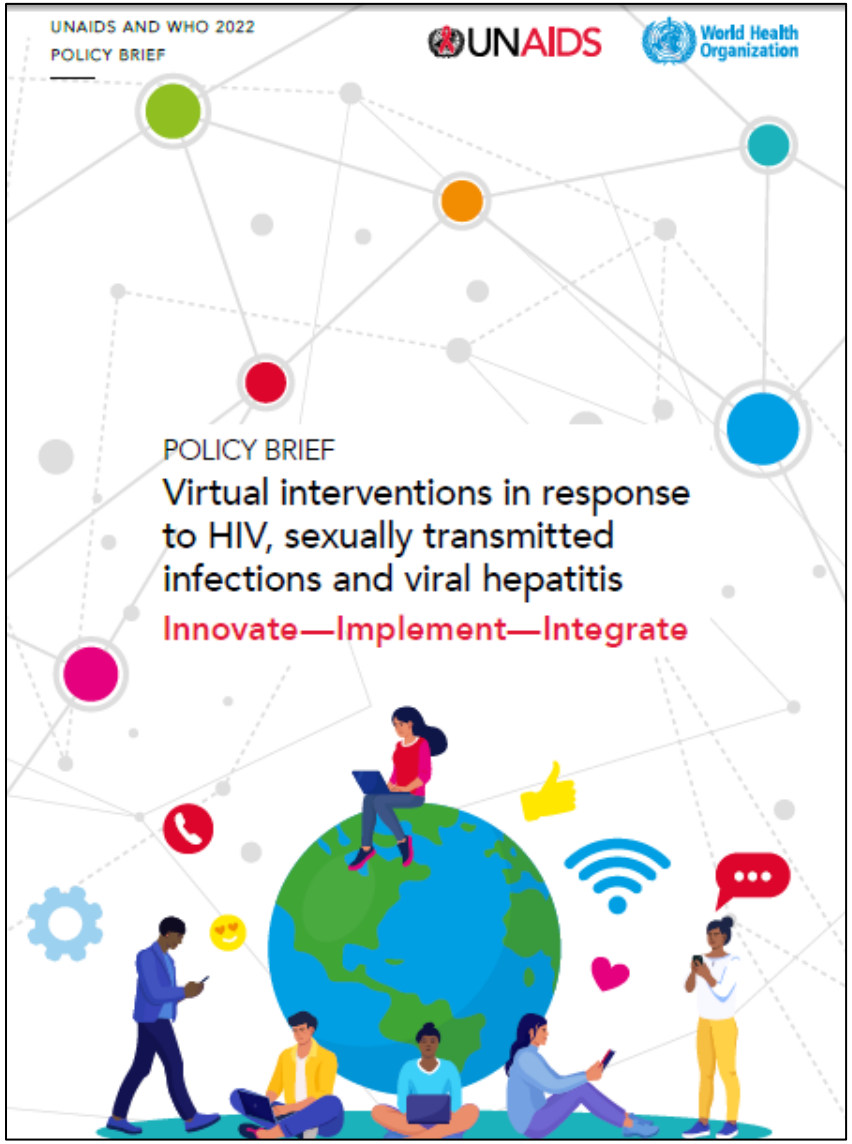




Source: Digital 2024 report

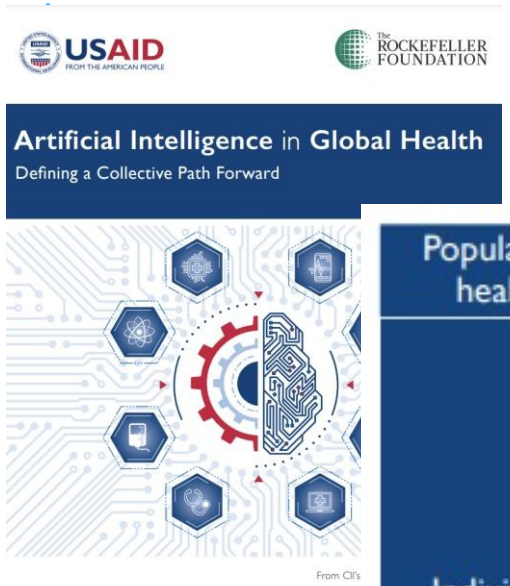
POLICY BRIEF - 2022

- Support programmes and governments to plan and implement virtual interventions to accelerate the progress towards meeting global goals
- Help programmes and governments to plan, adapt and implement safe and effective virtual service delivery during COVID-19 related restrictions and learn from these for future implementation.
- Provide guiding principles and an adaptable framework for virtual interventions to enable stakeholders to prioritize approaches and activities based on the country context and needs.
- Help programmes to identify technical assistance needs for approaches they would like to plan and implement.



UNAIDS World Health Organization

AI USE CASES IN HEALTHCARE



Population health

- 1A Surveillance and prediction
- 1B Population risk management
- 1C Intervention selection
- 1D Intervention targeting

Individual health

Care routing

- 2A Self-referral
- 2B Triage
- 2B Personalized outreach

Care services

Prevention	Diagnosis	Acute treatment	Follow-up and chronic treatment
3 Behavior change • Exercise • Diet • Wellness • Education	4A Data-driven diagnosis • Symptom-based • Lab-based 4B Image-based diagnosis • Radiology • Pathology	5A Clinical decision support • Treatment guidance • Medication prescribing	5A Compliance monitoring • Medication adherence • Rehab compliance • Dietary compliance

- 5B Monitoring: Inpatient monitoring, device monitoring
- 5C AI-facilitated care: Self-care guidance, psych counseling
- 5D AI-facilitated care: Robotic surgery, robotic PT

Health Systems

- 7A Medical records
- 7B Capacity planning and personnel management
- 7C Claims processing
- 7D Fraud prevention
- 7E Quality assurance and training
- 7F Coding and billing

Pharma & Medtech

- 8A Clinical trial support and recruitment
- 8B Drug discovery and medtech R&D
- 8C Drug safety and pharmacovigilance
- 8D Supply chain and planning optimization
- 8E Process optimization
- 8F Real world evidence and HEOR

- Source: Artificial Intelligence in Global Health: Defining a Collective Path Forward (https://www.usaid.gov/sites/default/files/2022-05/AI-in-Global-Health_webFinal_508.pdf)

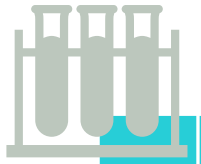
UNAIDS World Health Organization

AI EXPERT CONSULTATION SUMMARY

Conducted by WHO in July 2024

OPPORTUNITIES FOR USING AI

Public Health Outcomes – Improved diagnosis, retention, self care and access



Testing

- Result interpretation/ linkage to prevention and care
- Self care option
- Access to information on testing
- Ease for HCW at POC
- AI for procurement processes
- Smart guidelines
- Regulating AI as a diagnostic tool
- Data sharing and privacy
- Multilingualism

Prevention

- Improved access to PrEP
- AI based risk assessment and analysis for offering PrEP
- Behaviour change communication through Chatbots and other AI channels
- Opportunity to address stigma
- Smart guidelines
- Shortage of domain experts
- Privacy
- Accountability and regulatory considerations

Treatment

- Retention in care & treatment adherence
- Preventing treatment interruption (prediction of risk)
- Treatment related information through telehealth (chatbots)
- Smart guidelines
- Quality of data collection
- Ability to scale
- Equity in implementing AI models in different health settings and geographies

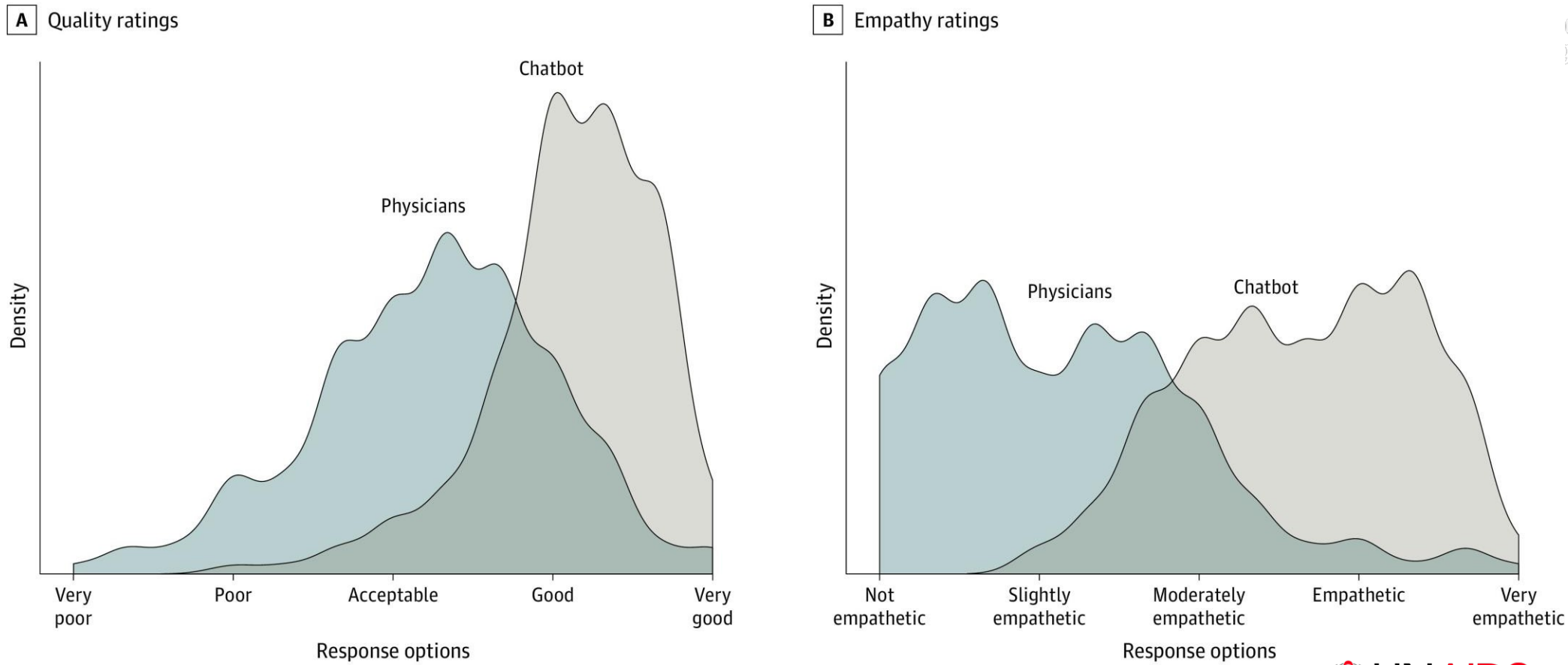
Strategic Information – 1. Improved data analysis and reporting 2. Improved routine data monitoring 3. Drug and Diagnostic stock gaps analysis 4. Patient monitoring and data collection for improving health services and outcomes 5. Access to WHO and other information.

JAMA Internal Medicine

April 28, 2023

Comparing Physician and Artificial Intelligence Chatbot Responses to Patient Questions Posted to a Public Social Media Forum

John W. Ayers, PhD, MA[1,2]; Adam Poliak, PhD[3]; Mark Dredze, PhD[4]; et al



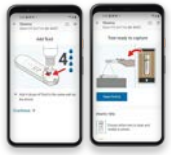
LOWER ACCESS BARRIERS VIA TELEHEALTH

World Health Organization

AI model on Quality assured remote self-testing unlocks new channels for prevention, treatment, & retention

Self-testers

Buy self-test from online pharmacy



Guided self-test and AI-facilitated results capture

AI verified results

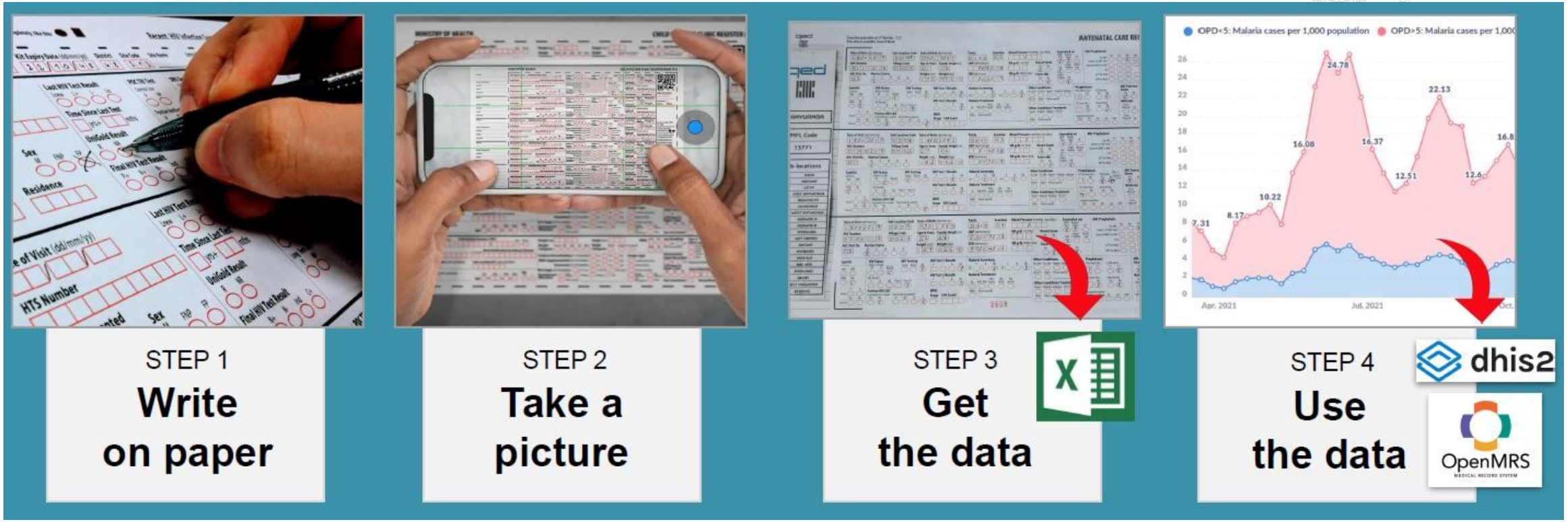
Clinician reviews
AI decision support

Counselling, access to PrEP, PEP, or referral for follow-up care

Source: Audere, South Africa

UNAIDS World Health Organization

AUTOMATED DATA CAPTURE AND ANALYTICS AVAILABLE AT ALL LEVELS



UNAIDS World Health Organization

CHALLENGES AND CONSIDERATIONS

01

DATA PRIVACY AND SECURITY

Ensuring the privacy and security of user data is crucial for the widespread adoption of AI-powered tools in the healthcare domain.

02

EQUITY

Many nations face significant disparities in terms of technological infrastructure, digital literacy, and access to data.

03

LACK OF EVIDENCE DRIVEN DATA

The limited availability of high-quality, diverse datasets can hinder the development and validation of effective AI models for these infections.

04

COMPLACANCY AND RESISTANCE

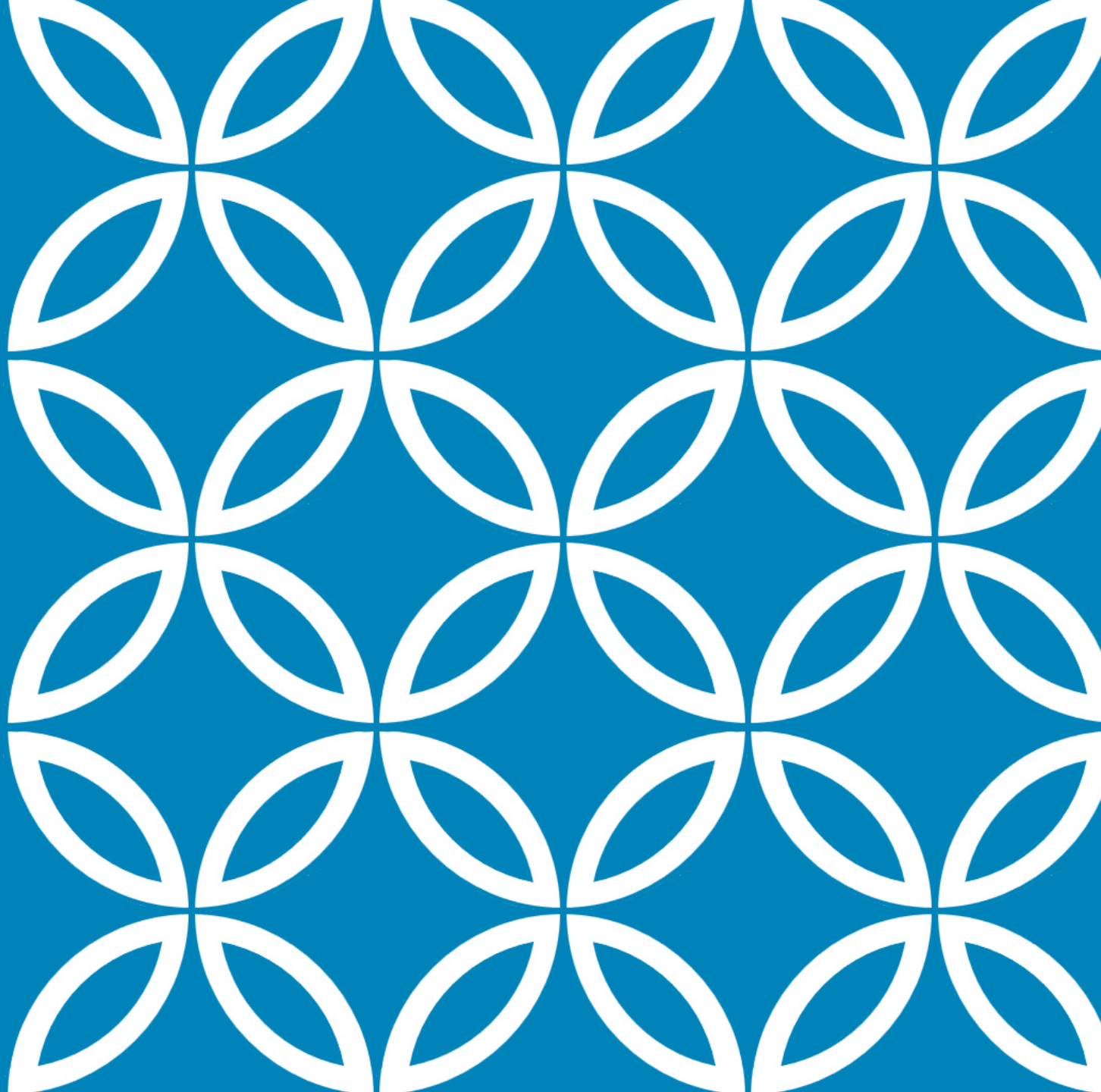
Overcoming the reluctance of some service providers to adopt new technologies and ensuring their trust in AI-powered tools is a significant challenge.

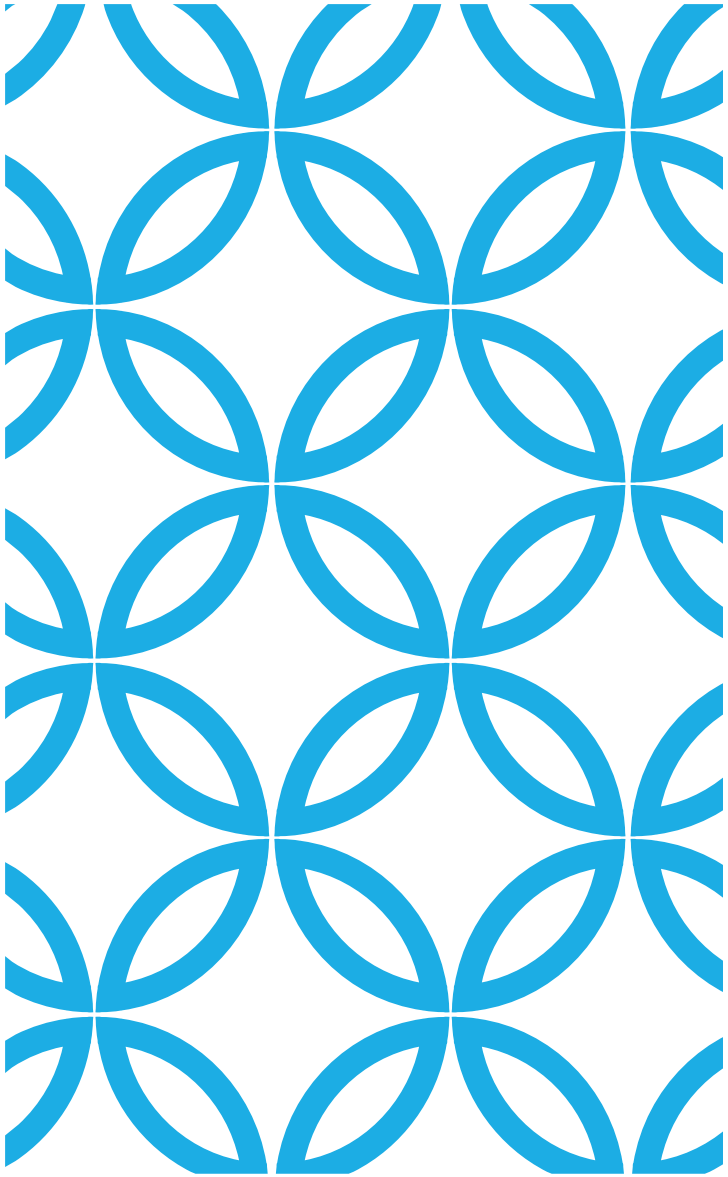
SAFE AND ETHICAL USE OF AI IS CRITICAL

ETHICS	Ensuring respect for patient autonomy, consent, and privacy.
SAFETY AND PRIVACY	Protecting users from harm caused by AI errors or unintended consequences
ACCURACY	Guaranteeing that AI predictions and recommendations are reliable and evidence-based.
SECURITY	Safeguarding sensitive health data from breaches and unauthorized access or use.
LOCAL CONTEXT	Adapting AI solutions to fit cultural, social, and healthcare realities on the ground.
BIAS	Preventing algorithmic discrimination based on gender, race, socioeconomic status or any other factors.
INFRASTRUCTURE	Addressing the lack of technological resources and connectivity needed for AI implementation.
GOVERNANCE	Establishing clear policies and regulations to manage AI systems in healthcare.

WHAT'S NEXT WITH AI?

- Technical Brief on the use of AI for Testing and Prevention in HIV, Hepatitis and STI Programmes
- Support countries to understand and use AI ethically
- Work with AI experts and partners to chart possible solutions to current challenges





Key takeaway

WITH GREAT POWER COMES GREAT RESPONSIBILITY

THANK YOU

Connect: Purvi Shah, shahp@unaids.org